

Prof. NİYAZİ ALPER TAPAN

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: H-6416-2013

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Education Information

Doctorate, Illinois Institute of Technology, United States Of America 1999 - 2003

Postgraduate, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, Turkey
1996 - 1999

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, Turkey
1992 - 1996

Foreign Languages

English, C1 Advanced

Research Areas

Engineering and Technology

Academic Titles / Tasks

Professor, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2017 - Continues

Associate Professor, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2010 - Continues

Assistant Professor, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2007 - 2010

Lecturer PhD, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2005 - 2007

Research Assistant, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2003 - 2005

Research Assistant, Gazi University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 1999 - 2003

Research Assistant, Middle East Technical University, Faculty Of Engineering, Department Of Chemical Engineering, 1996
- 1999

Academic and Administrative Experience

Uygulama ve Araştırma Merkezi Yönetim Kurulu Üyesi, Gazi University, 2017 - 2020

ADVISING THESSES

TAPAN N. A., Synthesis And Characterization Of Composite Electro-Catalyst For Hydrogen Production, Doctorate, A.ZARRABI(Student), 2020

TAPAN N. A., Investigation Of Rare Earth Element Containing Electrocatalysts On Hydrogen Evolution Reaction, Postgraduate, B.TARAKÇI(Student), 2020

TAPAN N. A., Production Of Biodiesel Under Hydrothermal Conditions Using Marl, Postgraduate, B.Najafov(Student), 2016

TAPAN N. A., Synthesis of nanorod and defining electro-catalyst activity, Postgraduate, U.ZHUMATAYEVA(Student), 2012

TAPAN N. A., 2-PROPANOL YAKIT HÜCRESİNİN PERFORMANS ANALİZİ, Postgraduate, E.ALEMDAR(Student), 2010

TAPAN N. A., INVESTIGATING OF DIRECT ETHANOL FUEL CELL USAGE POTENTIALS OF (NON Pt BASED) BINARY TRANSITION METALS, Postgraduate, Ö.YILDIZ(Student), 2009

TAPAN N. A., Ereğli yüksek basınç doğalgaz boru hattının katodik koruma sisteminin değişik anot materyalleri kullanılarak optimizasyonu, Postgraduate, F.MEHMET(Student), 2006

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Machine learning solutions for enhanced performance in plant-based microbial fuel cells**
Gürbüz T., Günay M. E., TAPAN N. A.
International Journal of Hydrogen Energy, vol.78, pp.1060-1069, 2024 (SCI-Expanded)
- II. **Analysis of CO selectivity during electroreduction of CO₂ in deep eutectic solvents by machine learning**
Guenay M. E., TAPAN N. A.
JOURNAL OF APPLIED ELECTROCHEMISTRY, vol.54, no.7, pp.1541-1556, 2024 (SCI-Expanded)
- III. **Evaluation of polymer electrolyte membrane electrolysis by explainable machine learning, optimum classification model, and active learning**
Günay M. E., TAPAN N. A.
Journal of Applied Electrochemistry, vol.53, no.3, pp.415-433, 2023 (SCI-Expanded)
- IV. **Application of Machine Learning for the Determination of Damaged Starch Ratio as an Alternative to Medcalf and Gilles Principle**
TAPAN N. A., Gunay M. E., Yildirim N.
FOOD ANALYTICAL METHODS, vol.16, no.3, pp.604-614, 2023 (SCI-Expanded)
- V. **Application of Gaussian process regression and asymmetric least squares baseline algorithm on the determination of electrochemical sensor characteristics: A case study on SARS-CoV-2 glucometer**
Tapan N. A.
CHEMOMETRICS AND INTELLIGENT LABORATORY SYSTEMS, vol.230, pp.1-7, 2022 (SCI-Expanded)
- VI. **Analysis and modeling of high-performance polymer electrolyte membrane electrolyzers by machine learning**
Tapan N. A., Günay M. E., Akkoç G.
International Journal Of Hydrogen Energy, vol.47, no.4, pp.2134-2151, 2022 (SCI-Expanded)
- VII. **Significant parameters and technological advancements in biodiesel production systems**
Gunay M. E., Turker L., TAPAN N. A.
FUEL, vol.250, pp.27-41, 2019 (SCI-Expanded)
- VIII. **Decision tree analysis for efficient CO₂ utilization in electrochemical systems**
Gunay M. E., Turker L., TAPAN N. A.
JOURNAL OF CO₂ UTILIZATION, vol.28, pp.83-95, 2018 (SCI-Expanded)
- IX. **Analysis of past experimental data in literature to determine conditions for high performance in biodiesel production**
TAPAN N. A., Yildirim R., Gunay M. E.
BIOFUELS BIOPRODUCTS & BIOREFINING-BIOFPR, vol.10, no.4, pp.422-434, 2016 (SCI-Expanded)
- X. **Constructing global models from past publications to improve design and operating conditions for direct alcohol fuel cells**

- TAPAN N. A., Gunay M. E., YILDIRIM R.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.105, pp.162-170, 2016 (SCI-Expanded)
- XI. **Ceria Based Nano-composite Synthesis for Direct Alcohol Fuel Cells**
TAPAN N. A., Cacan U. B., VARIŞLI D.
INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, vol.9, no.8, pp.4440-4464, 2014 (SCI-Expanded)
- XII. **Simulation of impedance spectra of oxalic acid electroreduction to glyoxylic acid: effect of chemical activator, pH, activation energy, and reduction potential**
Tapan N. A.
TURKISH JOURNAL OF CHEMISTRY, vol.38, no.1, pp.127-141, 2014 (SCI-Expanded)
- XIII. **DETERMINATION OF ETHANOL AND CARBON MONOXIDE ELECTRO-OXIDATION ACTIVITIES OF PtRuC/CeO₂ COMPOSITE ELECTRO-CATALYSTS**
TAPAN N. A., Zhumatayeva U., Gokkaya E.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.28, no.4, pp.819-829, 2013 (SCI-Expanded)
- XIV. **TRANSESTERIFICATION REACTION OVER BASIC AMBERLYST RESIN CATALYSTS AND OPTIMIZATION VIA RESPONSE SURFACE METHODOLOGY**
OKTAR N., Ozbay N., Aydin F., TAPAN N. A.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.27, no.1, pp.71-79, 2012 (SCI-Expanded)
- XV. **Synthesis and Characterization of Pt-Sn Incorporated MCM-41 and Pt Incorporated Sn-SiO₂ Type Mesoporous Catalysts for Direct Ethanol Fuel Cell**
VARIŞLI D., Rona T., TAPAN N. A.
INTERNATIONAL JOURNAL OF CHEMICAL REACTOR ENGINEERING, vol.8, 2010 (SCI-Expanded)
- XVI. **ELECTROLUMINESCENT PROPERTIES OF CERTAIN POLYAROMATIC COMPOUNDS: PART 1- CHARACTERISTICS OF OLED DEVICES BASED ON FLUORESCENT POLYAROMATIC DOPANTS**
Turker L., Tapan A., Gümüş S.
POLYCYCLIC AROMATIC COMPOUNDS, vol.29, no.3, pp.123-138, 2009 (SCI-Expanded)
- XVII. **ELECTROLUMINESCENT PROPERTIES OF CERTAIN POLYAROMATIC COMPOUNDS: PART 2-ORGANIC EMITTERS**
Turker L., Tapan A., Gümüş S.
POLYCYCLIC AROMATIC COMPOUNDS, vol.29, no.3, pp.139-159, 2009 (SCI-Expanded)
- XVIII. **Characterization of Cerium Oxide and Carbon Supported Ag-Cu Electro-Catalysts for Anode Electrode in Direct Ethanol Fuel Cells**
TAPAN N. A., Koek A.
CHEMICAL ENGINEERING COMMUNICATIONS, vol.196, pp.131-147, 2009 (SCI-Expanded)
- XIX. **Performance analysis for direct 2-propanol fuel-cell based on Pt containing anode electrocatalysts**
Tapan N. A., Ozturk E.
TURKISH JOURNAL OF CHEMISTRY, vol.33, no.4, pp.487-499, 2009 (SCI-Expanded)
- XX. **Biohydrogen production: molecular aspects**
Turker L., Gümüş S., Tapan A.
JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH, vol.67, no.11, pp.994-1016, 2008 (SCI-Expanded)
- XXI. **Esterification of free fatty acids in waste cooking oils (WCO): Role of ion-exchange resins**
Ozbay N., Oktar N., Tapan N. A.
FUEL, vol.87, pp.1789-1798, 2008 (SCI-Expanded)
- XXII. **A mechanistic approach to elucidate ethanol electro-oxidation**
TAPAN N. A.
TURKISH JOURNAL OF CHEMISTRY, vol.31, no.5, pp.427-443, 2007 (SCI-Expanded)

Articles Published in Other Journals

- I. **Analysis of PEM and AEM electrolysis by neural network pattern recognition, association rule mining and LIME**
Tapan N. A., Günay M. E.
ENERGY AND AI, vol.13, pp.1-13, 2023 (Scopus)
- II. **Data Mining and Application of Decision Tree Modelling on Electrochemical Data Used for Damaged Starch Detection**
Tapan N. A., Yıldırım N.
Gazi University Journal of Science Part A: Engineering and Innovation, vol.8, no.4, pp.435-450, 2021 (Peer-Reviewed Journal)
- III. **PEM Elektrolizörler İçin Düşük Platin Yüklemeli Serya Kompozit Destekli Elektrokatalizörlerin İncelenmesi**
TAPAN N. A.
Yuzuncu Yil University Journal of the Institute of Natural and Applied Sciences, vol.24, no.1, pp.9-21, 2019 (Peer-Reviewed Journal)
- IV. **CO₂ electroreduction on P4VP modified copper deposited gas diffusion layer electrode: pH effect**
TAPAN N. A.
MATERIALS FOR RENEWABLE AND SUSTAINABLE ENERGY, vol.5, no.4, 2016 (ESCI)
- V. **A short communication on the corrosion behavior O₂ reduction and methanol oxidation activity of stainless steel 304 after biofilm formation in black seawater**
TAPAN N. A., Zan M.
Gazi University Journal of Science, vol.25, no.2, pp.477-483, 2012 (Scopus)
- VI. **Determination of Methanol Decomposition Mechanism on polycrystalline Platinum Electrode**
Tapan N. A., Prakash J.
Turkish Journal of Engineering and Environmental Sciences, vol.29, pp.95-103, 2005 (Peer-Reviewed Journal)
- VII. **Investigation of Methanol Oxidation on Polycrystalline Pt Importance of Water gas shift Reaction**
TAPAN N. A., Prakash J.
Turkish Journal of Engineering and Environmental Sciences, vol.29, pp.129-142, 2005 (Peer-Reviewed Journal)

Books & Book Chapters

- I. **Elektrokimyanın Temelleri Fundamentals of Electrochemistry**
TAPAN N. A., AKSU M. L.
Nobel Yayınevi, 2015
- II. **KİMYA MÜHENDİSLİĞİNDE TEMEL İLKELER VE HESAPLAMALAR Basic Principles and Calculations In Chemical Engineering**
Sarımışeli Paçacı A., Tapan N. A., Erdoğan S., Mutlu S. F. (Editor)
Nobel Yayınevi, Ankara, 2014
- III. **Proses Dinamiği ve Kontrolü Process Dynamics and Control**
Tapan N. A., Erdoğan S.
Nobel Yayınevi, Ankara, 2012

Refereed Congress / Symposium Publications in Proceedings

- I. **Determination of Damaged Starch Amount Based on Iodine Detection by Graphene Based Electrodes**
Tapan N. A., Yıldırım N.
NCC-8 National Catalysis Congress, Ankara, Turkey, 9 - 12 September 2021, pp.120
- II. **Composite Electro-catalyst Synthesis for Hydrogen Production**
ZARRABİ A., TAPAN N. A.
International Conference on Advanced Materials Science & Engineering and High Tech Devices Applications;

Exhibition, Ankara, Turkey, 02 October 2020, pp.30

- III. **A Study on Low Pt Loaded Metal Ceria Based Catalysts for Stable PEM Electrolyzers**
TAPAN N. A.
Electrochem 2019, 30 September 2020
- IV. **Machine Learning on Electrocatalytic reduction of CO₂ for Preventing Atmospheric Pollution and Producing Valuable Chemicals**
TAPAN N. A., GÜNAY M. E., TÜRKER B. L.
2019 International Conference on Green Energy and Environmental Technology (GEET-19), 24 July 2020
- V. **Performance analysis for 2 propanol and direct methanol fuel cells based on Pt containing anode electrocatalysts**
Tapan N. A., Öztürk E.
2nd National Catalysis Conference, Erzurum, Turkey, 18 - 21 June 2008, pp.81
- VI. **CO₂ electroreduction on P4VP modified copper deposited gas diffusion layer electrode pH effect**
TAPAN N. A., KOPER M., RUUD K.
6th Baltic Electrochemistry Conference, 15 - 17 June 2016
- VII. **Characterization of Ceria Nano-composites and Their Performance of in Direct Alcohol Fuel Cells**
TAPAN N. A., CACAN U., VARIŞLI D.
Characterization of Ceria Nano-composites and Their Performance of in Direct Alcohol Fuel Cells, Adana, Turkey, 23 - 26 April 2014
- VIII. **Effect of Marl on the Production of Biodiesel as a Heterogeneous Catalyst**
NAJAFOV B., TAPAN N. A.
NCC6 The 6th Catalysis Conference, 27 - 30 April 2016
- IX. **Electroreduction of CO₂ on PVP loaded copper electrodes supported on gas diffusion layer**
TAPAN N. A., KOPER M., KORTLEVER R.
Electrochem 2015, TU Delft, Netherlands, 28 September 2015
- X. **Ceria Nano composite Synthesis for Direct Alcohol Fuel Cells**
TAPAN N. A.
11th European Congress on Catalysis – EuropaCat-XI, Lyon, France, 1 - 06 September 2013
- XI. **Nano çubuk sentezi ve Elektrokatalitik Aktivitesinin Belirlenmesi**
Zhutmatayeva U., TAPAN N. A.
UKMK 10, Koç Üniversitesi, İstanbul, Turkey, 3 - 06 September 2012
- XII. **Doğrudan Alkol Yakıt Hücreleri için Seryum Nano Kompozit Çubuk Sentezi**
TAPAN N. A., GÖKKAYA E.
UKMK 10 , Koç Üniversitesi, İstanbul, Turkey, 3 - 06 September 2012
- XIII. **Ceria Composite Nano rod for PEM Fuel Cells**
TAPAN N. A., GÖKKAYA E.
National Catalysis Congress, NCC4, Turkey, 21 - 24 March 2012
- XIV. **Electrokinetic Investigation of Oxalic Acid Electroreduction by the Simulation of Impedance Spectrum Activator Effect**
TAPAN N. A., GÖÇMENOĞLU A.
National Catalysis Congress, NCC4, Turkey, 21 - 24 March 2012
- XV. **Investigation of Combined Effect of co solvents on soybean Transesterification Kinetics**
TAPAN N. A., OKTAR N.
6th EFCAT Summer School, 13 - 19 September 2010
- XVI. **The Promoting Effect of AgCu CeO₂ on Pt C in direct ethanol fuel cells**
TAPAN N. A., YILDIZ Ö.
19th International Congress of Chemical and Process Engineering CHISA, 28 August - 01 September 2010
- XVII. **Amberlit A 26 Katalizörü Varlığında Biyodizel Üretimi**
Aydın F., Özbay N., OKTAR N., TAPAN N. A.
UKMK-9 , Gazi Üniversitesi, Ankara, Turkey, 22 - 25 June 2010
- XVIII. **uç durum değişkenine bağlı olarak 2 propanol Elektro oksidasyon mekanizmasının empedans**

spektrum simülasyonu ile incelenmesi

TAPAN N. A.

UKMK-9 , Gazi Üniversitesi, Ankara., Turkey, 22 - 25 June 2010

- XIX. **Düşük Pt ve Ru Yüklü Fe Ni İkili Metallerin Elektrokimyasal Performanslarının Doğrudan Etanol Yakıt Hücrelerinde Anot Elektrotu olarak değerlendirilmesi**
TAPAN N. A., Yıldız Ö.
3rd National Catalysis Congress, NCC3, Turkey, 28 April - 01 May 2010
- XX. **Synthesis and Characterization of Pt@MCMC-41 and Pt-Sn@MCM-41 Mesoporous Catalysts for Direct Ethanol Fuel Cell**
Rona T., VARIŞLI D., TAPAN N. A.
NCC-3 3rd National Catalysis Congress, Zonguldak, Turkey, 28 April 2010
- XXI. **Soybean Oil Transesterification Reaction Kinetics Effect of THF solvent**
TAPAN N. A., OKTAR N.
EuropaCat IX, 30 August - 04 September 2009
- XXII. **Performance analysis for 2 propanol and direct methanol fuel cells based on Pt containing anode electrocatalysts**
TAPAN N. A., Öztürk E.
Second National Catalysis Conference (NCC-2), Turkey, 18 - 21 June 2008
- XXIII. **Kanola Yağının Alumina ve Alumina Silikat Destekli Heterojen Katalizörler Varlığında Transesterifikasyonu**
Mumcu Ö., Özbay N., OKTAR N., TAPAN N. A.
23. Ulusal Kimya Kongresi, Sivas, Türkiye, Turkey, 16 - 20 June 2009
- XXIV. **Soya Yağından Biyodizel üretim Reaksiyon Kinetiğinin İncelenmesi**
Aydemir B., Gülderen A., TAPAN N. A., OKTAR N.
21. Ulusal Kimya Kongresi, Malatya, Turkey, 23 - 27 August 2007
- XXV. **Atık Yağlardaki Serbest Yağ Asitlerinin Heterojen Katalizörler İle Esterifikasyonu**
Özbay N., OKTAR N., TAPAN N. A.
21. Ulusal Kimya Kongresi, Malatya, Turkey, 23 - 27 August 2007
- XXVI. **Characterization of Cerium Oxide and Carbon Supported Ag Cu Electrocatalysts for Anode Electrode in Direct Ethanol Fuel Cells**
TAPAN N. A., KÖK A.
Sommer Symposium Series 1, 14 - 15 May 2007
- XXVII. **A Mechanistic Approach To Elucidate Ethanol Electro oxidation**
TAPAN N. A.
First National Catalysis Conference (NCC-1), 11, Güzelyurt, Northern Cyprus, Turkey, 17 - 20 January 2007
- XXVIII. **Platin Disk Elektrotlarda Etanol Elektro oksidasyon mekanizmasının modellenerek incelenmesi**
TAPAN N. A.
7. Ulusal Kimya Mühendisliği Kongresi, Eskişehir., Turkey, 5 - 08 September 2006
- XXIX. **Determination of Anode Electrokinetic Mechanism in a Direct Methanol Fuel Cell by Asymmetric Electrode Technique**
TAPAN N. A., William M., Prakash J.
International Hydrogen Energy Congress and Exhibition IHEC2005, 13 - 15 July 2005
- XXX. **Investigation of Methanol Oxidation Electrokinetics on Pt Ru Anode Catalyst**
TAPAN N. A., Gurau B., Sandi G., Jai P.
5th International Symposium on New Materials for Electrochemical Systems, 6 - 11 July 2003
- XXXI. **From Catalysis to Gas Sensors A Venue at Spillover**
TAPAN N. A., ÜNER D.
16th meeting of the North American Catalysis Society, 30 May - 04 June 1999

Other Publications

1. **2-Propanol Yakıt Hücresinin Performans Analizi (Yönetilen Tez)**
Tapan N. A., Öztürk E.
Other, pp.1-62, 2010

Supported Projects

- TAPAN N. A., Project Supported by Higher Education Institutions, İyot tayinine dayalı yenilikçi bir elektrokimyasal sistemle zedelenmiş nişasta miktarının grafen temelli elektrotlar üzerinde tespit edilmesi, 2018 - 2022
- TAPAN N. A., Project Supported by Higher Education Institutions, PEM elektrolizörleri için seryum içerikli kararlı elektrokatalizörlerin sentezi ve karakterizasyonu, 2016 - 2019
- TAPAN N. A., Project Supported by Higher Education Institutions, Atık suyun Elektrokoagülasyon yöntemi ile arıtılması, 2012 - 2014
- Tapan N. A., Varışlı D., TÜBİTAK Project, Doğrudan Alkol Yakıt Hücreleri için Düşük Pt Yüklemeli Seryum Nanokompozit Katalizör Sentez ve Karakterizasyonu, 2012 - 2014
- TAPAN N. A., Project Supported by Higher Education Institutions, Yakıt hücreleri için kompozit nano-çubuk sentezi ve karakterizasyonu, 2011 - 2013
- TAPAN N. A., Project Supported by Higher Education Institutions, 2-propanol Yakıt Hücresinin Performans Analizi, 2009 - 2012
- TAPAN N. A., Project Supported by Higher Education Institutions, Atık Yağ İçeriğindeki Serbest Yağ Asitlerinin Esterifikasyonunda Heterojen Katalizörlerin Kullanılması, 2008 - 2010
- TAPAN N. A., Project Supported by Higher Education Institutions, Seryum Oksit ve Aktive Edilmiş Karbon Destekli İkili Geçiş Metallerinin Direk Alkol Yakıt Hücresi Performanslarının Tespit Edilmesi, Spektroskopik ve Elektrokimyasal Karakterizasyonlarının Yapılması, 2007 - 2009
- TAPAN N. A., Project Supported by Higher Education Institutions, Doğrudan Metanol Yakıt Pillerinde Water-Gaz Shift Tepkimesini Artıran Katalizörlerin Geliştirilmesi ve Karakterizasyonu, 2005 - 2006

Metrics

Publication: 66
Citation (WoS): 384
Citation (Scopus): 453
H-Index (WoS): 8
H-Index (Scopus): 7

Non Academic Experience

Leiden Üniversitesi